What Is Claimed Is:

1. A fuel cell generator apparatus comprising:

at least one fuel cell assembly module comprising at least two side by side subassemblies each containing a plurality of fuel cells, each fuel cell having electrolyte between an oxidant electrode and a fuel electrode where the subassemblies are each fueled at their base by a fuel feed injector attached to a fuel feed pre-reformer which is connected to fuel distribution manifolds;

a module housing capable of withstanding temperatures over 600C enclosing the fuel cell assembly module;

an axially-elongated thin wall vessel surrounding the module housing, the vessel having two ends;

a purge gas space between the module housing and the vessel;

at least one fuel gas feed inlet through the vessel and connecting to the fuel feed injector;

common gaseous oxidant-purge gas feed inlet through the vessel;

exhaust gas outlet through the vessel connecting to a combusted gas plenum associated with the fuel cell assembly module through a semi-flexible duct;

insulation contacting the inside of the vessel within at least part of the purge gas space; and where the vessel is adapted to be used for either atmospheric gaseous feed or pressurized gaseous feed.

2. The fuel cell generator apparatus of Claim 1, wherein both oxidant – purge gas and fuel feed gas are pressurized, the oxidant-purge gas consists essentially of air, and the vessel is tubular.

3. The fuel cell generator apparatus of Claim 1, wherein the purge gas space contains insulation having a porosity of from about 70 vol.% to about 90 vol.%

4. The fuel cell generator apparatus of Claim 1, wherein the fuel cells are tubular solid oxide electrolyte fuel cells.

5. The fuel cell generator apparatus of Claim 1, wherein the fuel gas feed inlet is through the top of the vessel.

6. The fuel cell generator apparatus of Claim 1, wherein the gaseous oxidant-purge gas feed inlet and the exhaust gas outlet pass through an end of the vessel.

7. A method of operating a fuel cell generator apparatus comprising:

(1) passing a common gaseous oxidant-purge gas and a feed fuel gas through inlets and into at least one cell assembly module, each module comprising two side by side subassemblies, each containing a plurality of fuel cells, each fuel cell having electrolyte between an oxidant electrode and a fuel electrode, where the modules are each enclosed by a module housing capable of withstanding temperatures of over 600C, where the module housings are surrounded by an axially-elongated vessel having two ends, such that there is a purge gas space between the module housings and the vessel;

(2) passing a common gaseous oxidant-purge gas through the vessel to circulate within the purge gas space, where the gas dilutes any unreacted fuel gas flow from the module; and

(3) passing exhaust gas and circulated purge gas and any unreacted fuel gas out of the vessel, where the vessel is adapted to be used for either atmospheric gaseous feed or pressurized gaseous feed.

8. The method of Claim 7, wherein oxidant-purge gas will react with any unreacted fuel gas that passes into the purge gas space.

9. The method of Claim 7, wherein both oxidant-purge gas and fuel gas are pressurized, and the oxidant-purge gas consists essentially of air.

10. The method of Claim 7, wherein both oxidant-purge gas and fuel gas are pressurized over about 196.4 kPA, and the vessel is tubular.

11. A fuel cell generator apparatus comprising:

at least one fuel cell assembly module containing a plurality of fuel cells, the fuel cells fueled by a fuel feed injector attached to a fuel feed pre-reformer which is connected to a fuel distribution manifold;

a module housing capable of withstanding temperatures over 600C enclosing the fuel cell assembly module;

a vessel surrounding the module housing forming a purge gas space between the module housing and the vessel;

at least one fuel gas feed inlet connecting to the fuel feed injector;

a gaseous oxidant-purge gas feed inlet; and

an exhaust gas outlet connecting to a combusted gas plenum associated with the fuel cell assembly module,

wherein the vessel is adapted to be used for either atmospheric gaseous feed or pressurized gaseous feed.

12. The fuel cell generator apparatus of Claim 11, wherein the fuel cell assembly module comprises at least two side by side subassemblies each containing a plurality of the fuel cells.

13. The fuel cell generator apparatus of Claim 12, wherein each fuel cell has an electrolyte between an oxidant electrode and a fuel electrode.

14. The fuel cell generator apparatus of Claim 13, wherein the subassemblies are each fueled at their base by the fuel feed injector.

15. The fuel cell generator apparatus of Claim 11, wherein the fuel gas feed inlet extends entirely through the vessel.

16. The fuel cell generator apparatus of Claim 11, wherein the gaseous oxidant-purge feed inlet extends entirely through the vessel.

17. The fuel cell generator apparatus of Claim 11, wherein the exhaust gas outlet extends entirely through the vessel.

18. The fuel cell generator apparatus of Claim 11, wherein a semi-flexible duct connects to the combusted gas plenum.

19. The fuel cell generator apparatus of Claim 11, wherein insulation contacts the inside of the vessel.

20. The fuel cell generator apparatus of Claim 19, wherein at least a portion of the insulation is located within the purge gas space.